

(No Model.)

3 Sheets—Sheet 1.

F. S. SLATTERY.  
MACHINE FOR SIFTING PULVERIZED CLAY.

No. 543,221.

Patented July 23, 1895.

Fig 1

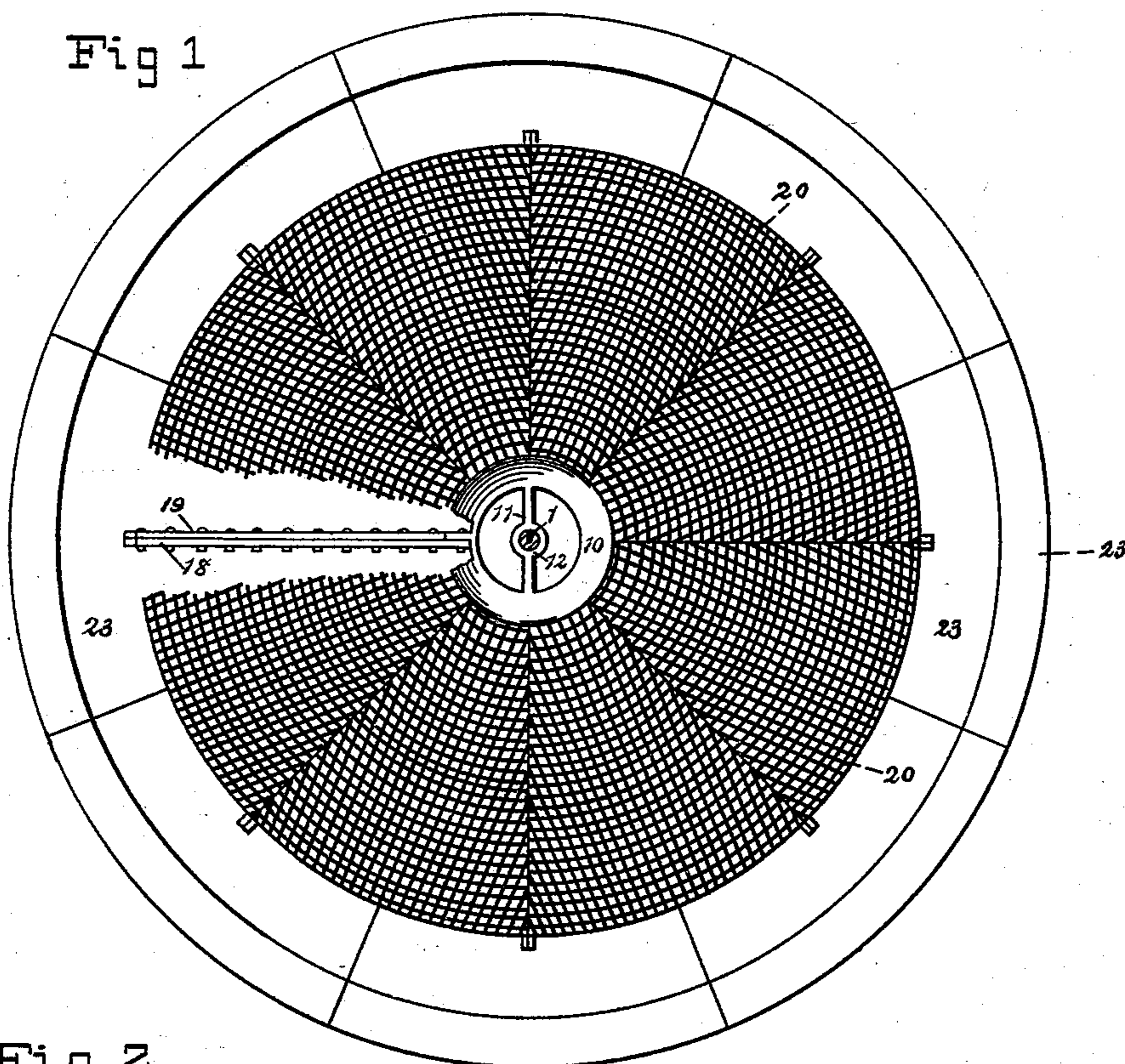
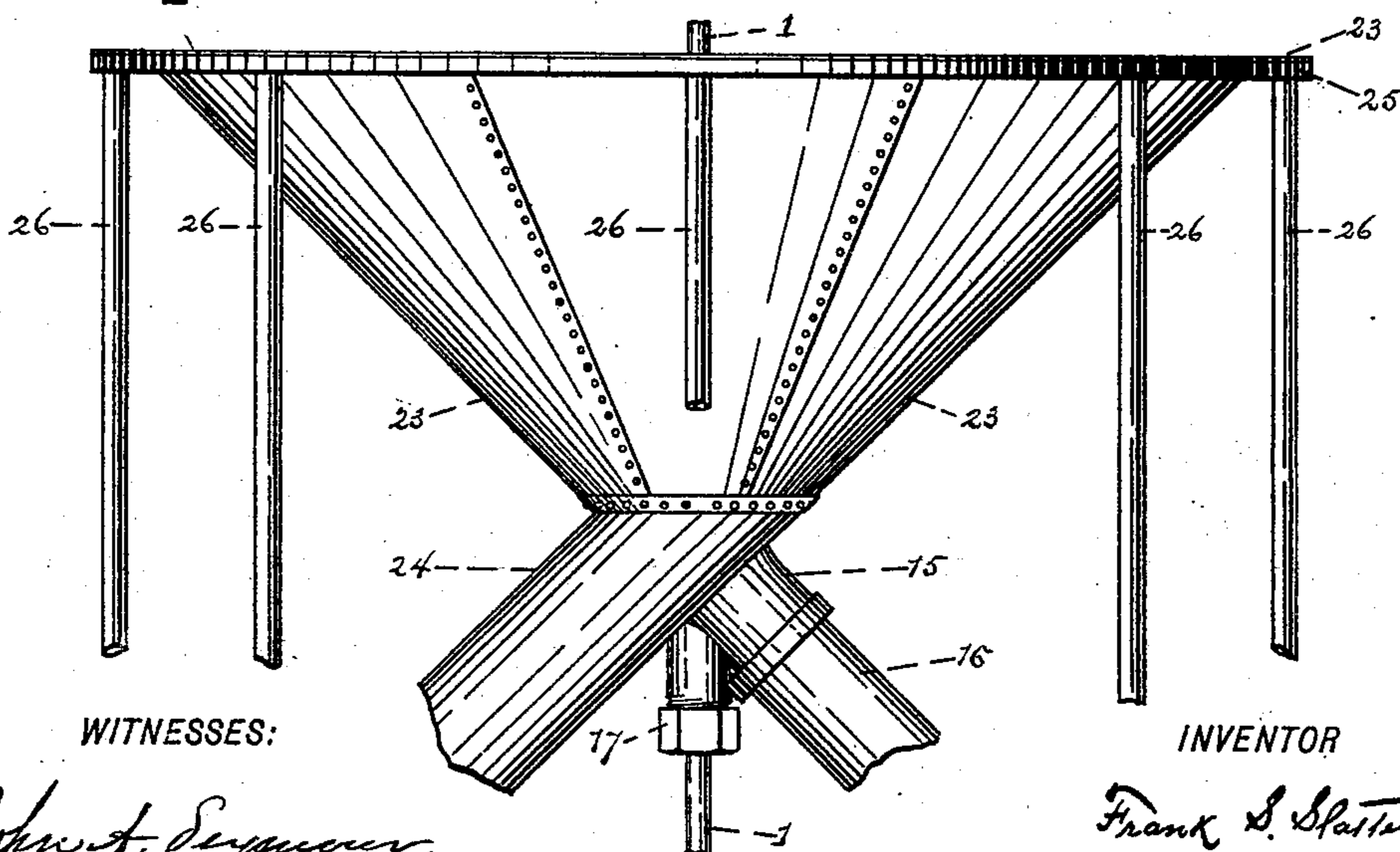


Fig 2



WITNESSES:

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INVENTOR

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Fig 3

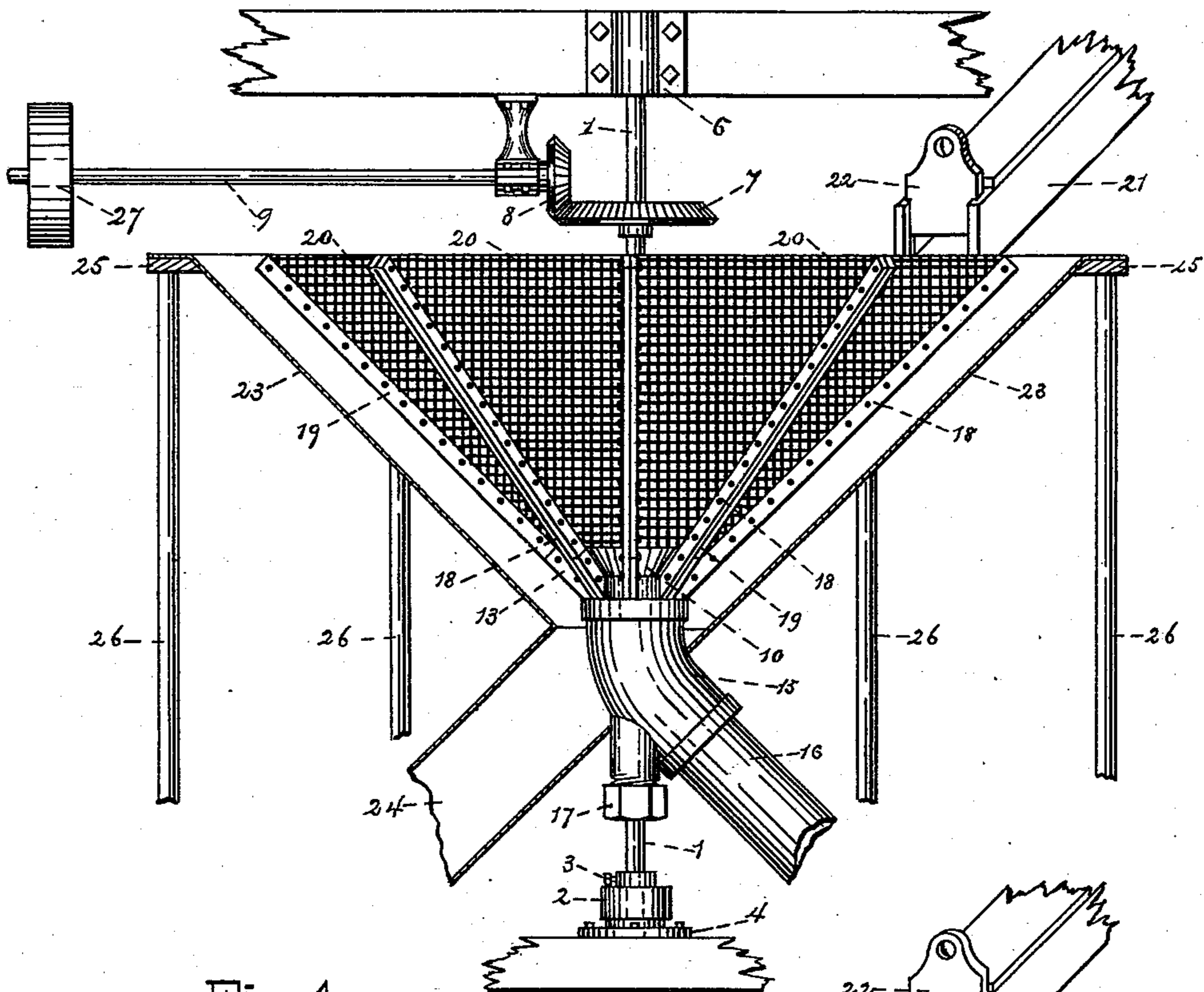


Fig 4

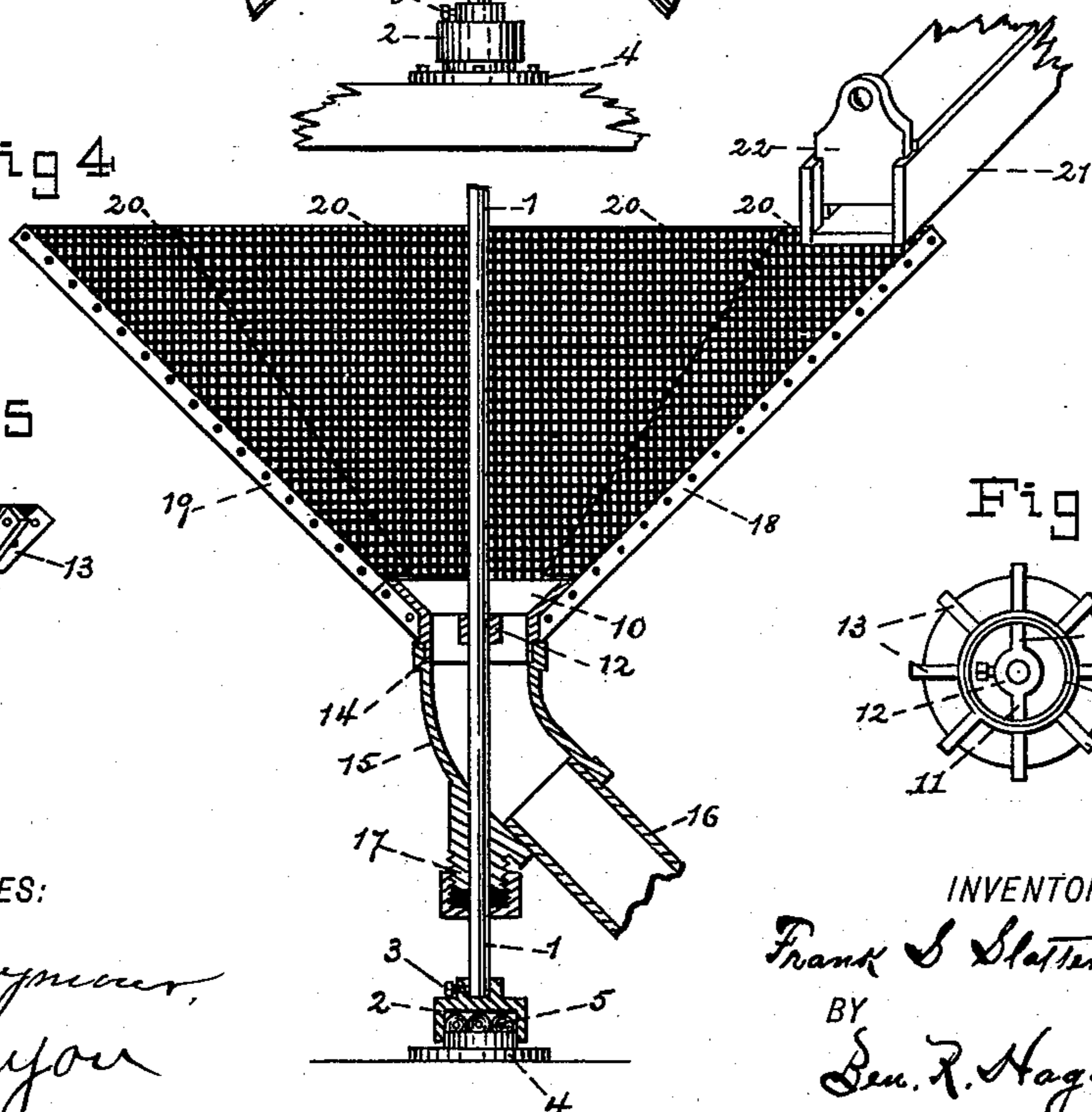


Fig 5

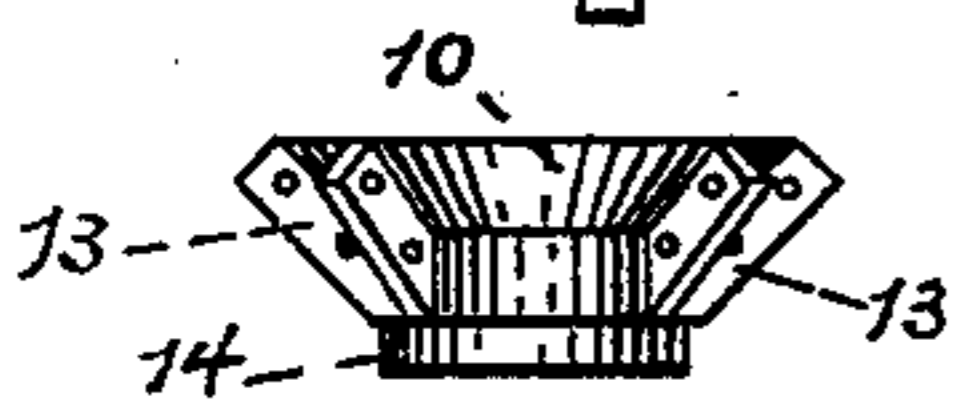
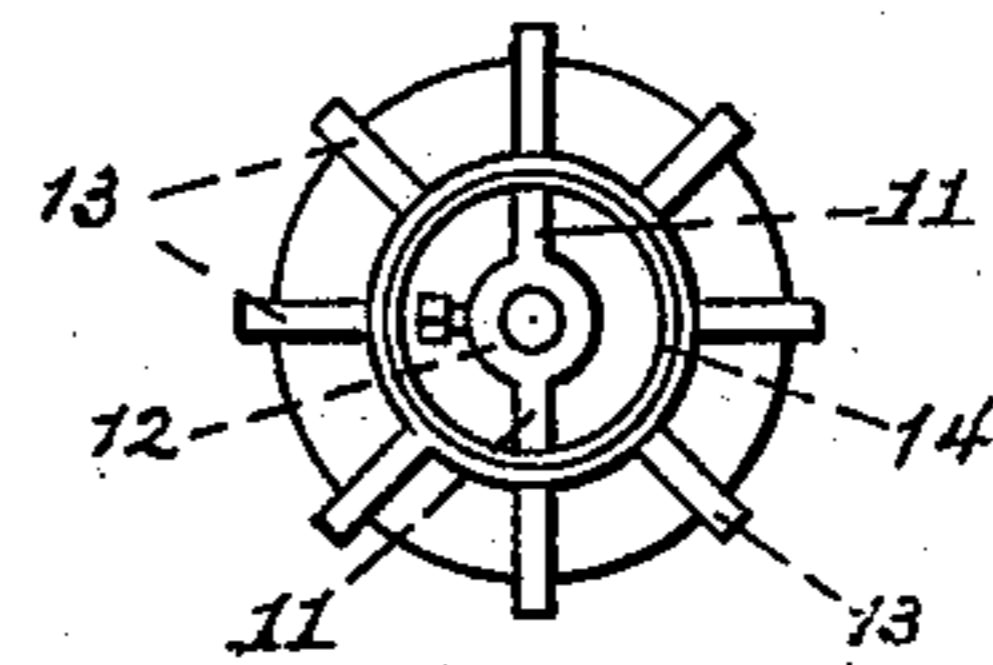


Fig 6



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(No Model.)

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Fig 7

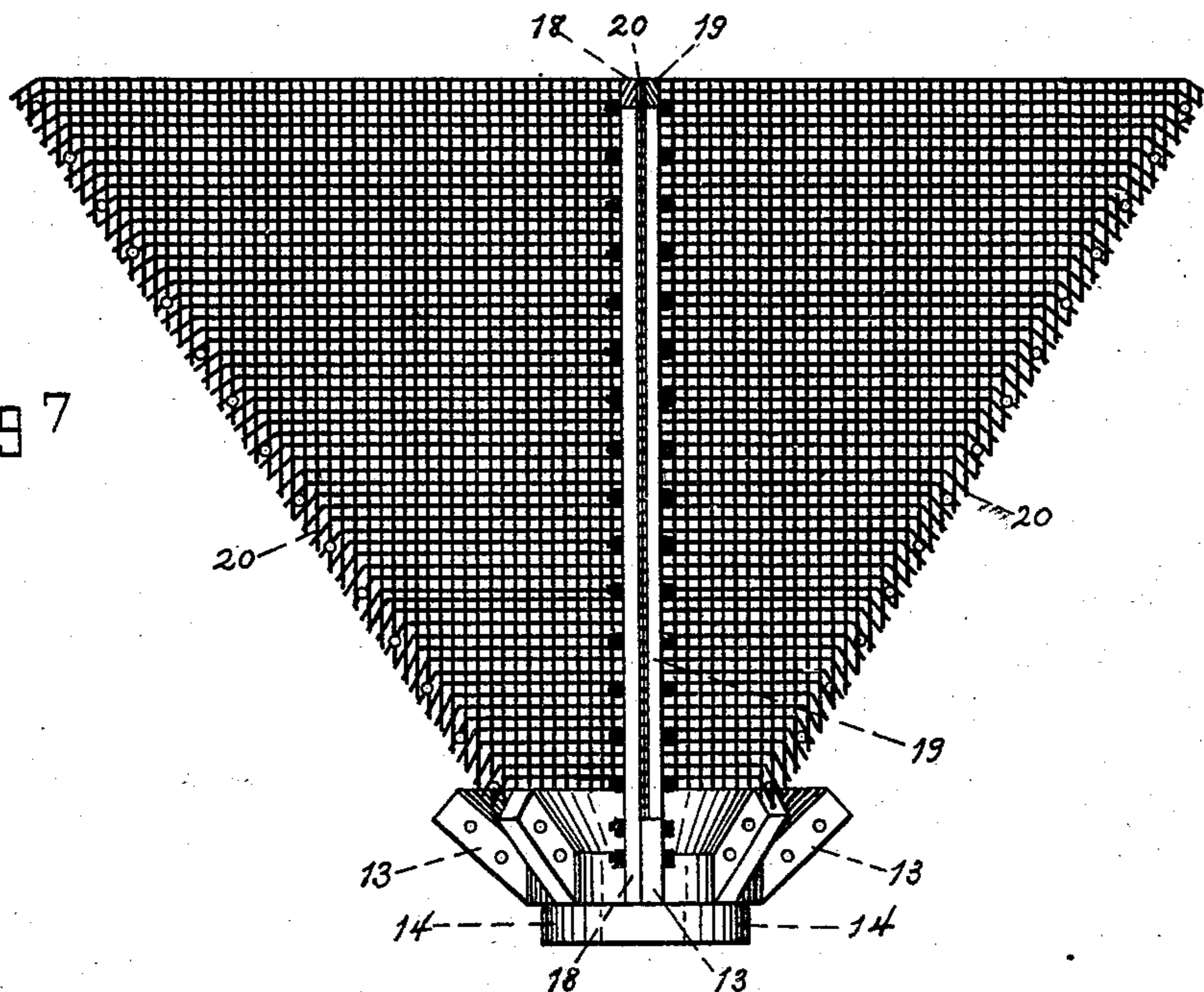
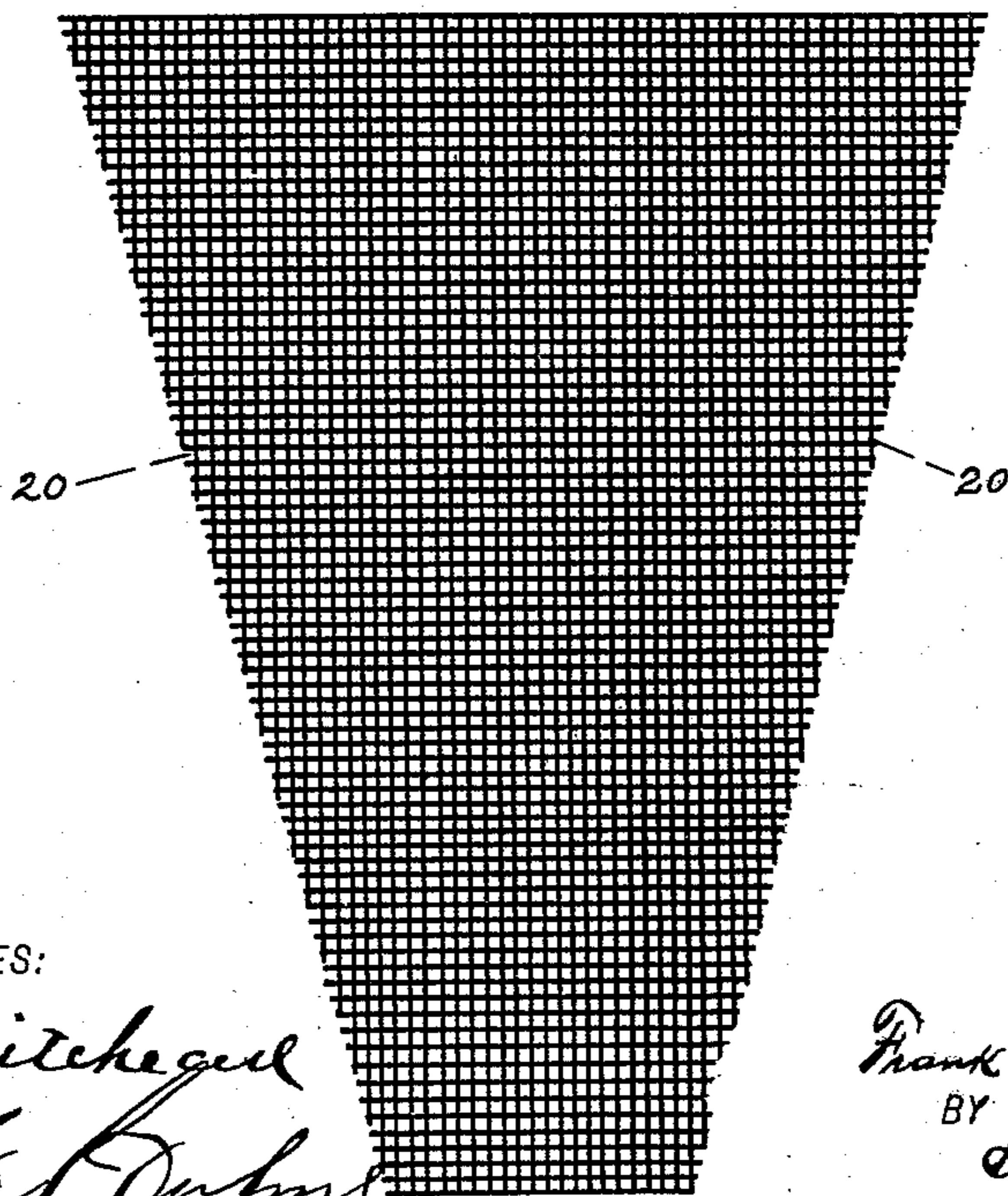


Fig 8



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# UNITED STATES PATENT OFFICE.

FRANK S. SLATTERY, OF BRADFORD, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO LEMUEL W. YOUNG, OF SAME PLACE.

## MACHINE FOR SIFTING PULVERIZED CLAY.

SPECIFICATION forming part of Letters Patent No. 543,221, dated July 23, 1895.

Application filed January 21, 1896. Serial No. 535,745. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. SLATTERY, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented a new and useful Improvement in Machines for Sifting Pulverized Clay, of which the following is a specification.

My invention relates to that class of machines used for sifting pulverized clay shale preparatory to pressing it into bricks under the dry-press process.

The object of my invention is to provide a screen that will be economical in its construction, easily and cheaply repaired; one that will not clog up when in use and that will thoroughly separate the tailings from the finer portion of the pulverized clay, and with which the size of the screened particles can be varied at the will of the operator of the machine. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a top view of my machine. Fig. 2 represents a side elevation. Fig. 3 represents a side elevation of the screen, the feeding-chute, the driving mechanism, and the outside shell, which is shown in cross-section. Fig. 4 represents a cross-sectional view of the screen and its connections, as shown in Fig. 3. Fig. 5 represents a side elevation of the funnel which is secured to the shaft and supports the screen. Fig. 6 represents a bottom view of Fig. 5. Fig. 7 represents a side elevation of the funnel and shows a pair of screen-bars, one of which is bolted to one of the outside ribs of the funnel. The other is shorter and rests on top of the rib and is bolted to the longer bar. It also shows the adjoining edges of two sections of screen held securely between them. Fig. 8 represents one of the sections of screen.

Similar numerals refer to similar parts throughout the several views.

N numeral 1 is the screen-shaft, provided with the foot-box 2, which is secured thereto by the set-screw 3.

4 is a grooved flange provided with anti-friction-balls 5, on which the foot-box 2 has its bearing.

6 is a journal-box, which supports the screen-shaft 1 and in which the shaft 1 revolves.

7 is a bevel gear-wheel in which meshes the pinion 8 on the drive-shaft 9.

10 is a funnel provided with the cross-bar 11 and collar 12, which latter is secured to the shaft 1 with a set-screw or its equivalent. It is also provided with the ribs 13 and the annular flange 14, which fits into the elbow 15 of the tailings-chute 16.

The elbow 15 is provided with a stuffing-box 17 through which the shaft 1 passes. The object of the stuffing-box 17 is to prevent a leakage of the tailings through the shaft-orifice of the elbow 15.

To the ribs 13 of the funnel 10 are bolted the bars 18, and to the bars 18 are secured the bars 19, which rest on top of the ribs 13. Between these bars are placed the side edges of the screen-sections 20. In the drawings the screen is represented as consisting of eight sections, which I consider the most practical number for the purpose intended. The object of having the screens made sectional is to be able to more readily repair them when worn and at a small cost, as a section can be replaced with but little labor and at one-eighth the expense that would be incurred if the screen was made of one entire piece.

21 is the feeding-spout, provided with the slide 22 for the purpose of regulating the supply of the pulverized clay to the machine. 23 is a funnel-shaped casing surrounding the screen for the purpose of receiving the screenings and guiding them into the delivery-chute 24. 25 is a rim consisting of a series of wooden cants of one or more courses supported by the standards 26, which are preferably of pipe. To the rim 25 is secured by bolts or otherwise the upper flange of the funnel-shaped casing 23.

In the operation of my machine the pulverized clay is fed through the chute 21, the quantity being regulated by the slide 22, the screen being revolved by the pinion 8 on the shaft 9, which is driven by the pulley 27. The quality of the bricks manufactured depends greatly on the minuteness of the particles of the clay composing them—that is, the finer the screenings are the finer and

smoother the face of the bricks will be and the higher will be their merchantable grade, and the coarser the screenings are the coarser and rougher will be the face of the bricks and the lower will be their grade. As the market demands high, low, and intermediate grades of brick, I have constructed my machine so that the size of the particles screened may be varied according to the desire of the operator of the machine. Thus by revolving the screen slowly the pulverized clay sifts through the screen by gravity, the finest portion passing through the meshes, the coarser portion falling in almost a perpendicular line with the feeding-chute 21 into the funnel 10 and thence into the tailings-chute 16. By increasing the speed of the machine so that a slight centrifugal power is exerted on the pulverized clay the siftings will be somewhat coarser. As the screen increases in speed the greater will be the centrifugal power and the coarser the siftings until the particles are as large as the meshes are capable of passing, thereby making a screen with one size of mesh serve for sifting several sizes of screenings.

The circumference of the top of my screen is about twenty-seven feet, and the pulverized clay discharged from the feeding-chute either passes through the screen or down through the tailings-chute before a revolution is made, leaving the portion of the screen presented to the mouth of the feeding-chute always clean and free from pulverized clay.

My machine can be used in an inverted form with the ribs and bars placed on the inside of the funnel and screen, the screen slowly revolved and the sifting done by gravity, the tailings being received in a trough at the base of the machine, but from actual tests made I prefer the screen set as shown.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for sifting pulverized clay, the combination with the vertical screen shaft and the foot box adapted to bear on antifriction balls, of the funnel formed with the cross-bars, collar, outside ribs and annular flange, the screen bars 18, fixedly secured to the ribs, and the screen bars 19, bearing on the top of the ribs, and means for securing them to the screen bars 18 substantially as shown and described.

2. In a machine for sifting pulverized clay the combination with the vertical screen shaft and the foot-box adapted to bear on antifriction balls, of the funnel formed with the cross-bars, collar outside ribs, and annular flange, the screen bars 18, fixedly secured to the ribs, and the screen-bars 19, bearing on the top of

the ribs, the said screen bars being adapted to receive between them the adjoining edges of the sections of screen, and means whereby the sections of screen can be held securely therein, or readily removed for the purpose of repairing substantially as shown and described.

3. In a machine for sifting pulverized clay, the combination with the vertical screen shaft, and the foot box adapted to bear on antifriction balls of the funnel having integral therewith the cross-bars, collar, outside ribs and annular flange, the screen bars 18, fixedly secured to the ribs, and the auxiliary screen bars 19, said screen bars being provided with both holes in alignment for the purpose of securing together the edges of the adjoining tapering sections of screen by means of bolts, substantially as shown and described.

4. In a machine for sifting pulverized clay, the combination with the vertical screen shaft and the foot box, of the funnel having integral therewith, the cross bars, collar, outside ribs and annular flange, and the casting formed with a cylindrical projection on its lower side, said projection being provided with a packing nut, and said casting being adapted to engage at its upper end with the annular flange and at its lower end with the tailings chute substantially as shown and described.

5. A machine for sifting pulverized clay, comprising a vertical screen shaft provided with a foot-box adapted to bear on antifriction balls, a funnel having integral therewith inside cross-bars—a collar adapted to be secured to the vertical screen shaft and an annular flange adapted to fit on the inside of the tailings chute casting, said casting being formed with a curved passageway and a cylindrical projection provided with a packing nut and connected with the tailings chute, each of the outside ribs provided with a pair of screen-bars of unequal length, the longer bar being bolted to the ribs, the shorter bar being adapted to rest on top of the rib and to be bolted to the longer bar, several tapering sections of screen the adjoining sides of which are adapted to be placed between the pairs of screen bars and held firmly therein by means of bolts, the outside funnel shaped casing connected at its lower orifice to the delivery chute and formed with a flange at its upper orifice, and the supporting frame consisting of a rim composed of several courses of wooden cants supported by standards, preferably of pipe, substantially as shown and described.

FRANK S. SLATTERY.

Witnesses:

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JOHN A. SEYMOUR.